



Focus on cutting quality, proper environmental control and a few other crucial factors now, and you'll have 80 percent of the work done before fall breaks.

Getting Your Finished Poinsettias Off to a Good Start

By Roger C. Styer



In the heat of the summer, it is always difficult to think about and do the little things so necessary for producing quality plants. People are either taking vacations, thinking about taking vacations or working less hours in the greenhouse. No one likes to work in the greenhouse when it is hot and humid! But this is the time of year when you can make or break your finished poinsettia crop depending on whether or not you get it off to a good start.

I tell growers if they can get through to the start of short days in good shape, they have 80 percent of the work done on their poinsettia crop. That means getting to about the end of September for most crops. The keys to achieving a good start on poinsettias include: 1) quality cuttings; 2) rooting in properly; 3) reducing environmental stress; 4) controlling insects and diseases and 5) doing things on time based on a proper crop schedule.

CUTTING QUALITY

There is an old saying used in the computer industry that relates to poinsettias very well — “garbage in, garbage out.” I cannot stress enough the importance of starting with quality poinsettia cuttings, whether you do your own stock or buy new cuttings. Decide on what quality specs you want, particularly if you produce your own stock. Be consistent in taking your own cuttings, and review the product weekly to keep quality in line. I have seen many growers get lax about quality as the summer goes on and more cuttings are needed. Usually, the result is smaller and thinner cuttings later in the season, which do not root out as quickly as quality cuttings.

When you buy cuttings from a broker, make sure you are getting consistent quality with each variety and ship week. I have seen a number of cases where the supplier shipped very small cuttings that the customer could not handle properly and, therefore, had difficulty rooting and growing. Getting cuttings from different suppliers is a guarantee of variation in cutting quality.

General guidelines for quality cuttings should be: 1) length of 2-3 inches;

2) stem diameter almost as thick as a pencil; 3) two pair of expanded leaves with a third pair not yet expanded; 4) sufficient green color to the leaves (no undue yellowing); 5) no whiteflies; 6) no diseases and 7) active growing tip. Some growers can handle smaller cuttings, but if you are doing direct-stick into pots, I suggest you not use smaller cuttings, as it is very easy to bury them too much and lose them to rot.

Cuttings too big or old will be difficult to root, as they are somewhat woody. On the other hand, small and thin cuttings will be just as difficult to root and may be lost more to diseases or environmental stresses. When receiving smaller and thinner cuttings, expect not to have to use as much growth regulator in propagation or the first month after potting.

Take the stress off of the cuttings by putting them into a moist cooler overnight and then sticking them the next morning. This should be done whether you cut your own or buy them in. If shipments arrive too warm (ice pack totally melted), you should notify your supplier at once for possible replacements. Cuttings should be turgid when stuck, with no leaf rot evident.

ROOTING IN

The rooting process, whether sticking into a rooting media such as Oasis or direct sticking into the finished pot, is the key to getting poinsettias off to a good start. Generally, it will take four weeks to root in Oasis and three weeks to root direct-stick. Some varieties, such as 'Monet Twilight' and some variegated varieties, will take a week longer. Under ideal conditions, rooting should take three weeks for most varieties.

The keys to proper rooting are to provide the best environmental conditions possible and practice good sanitation. Rooting temperature should be 72-75° F, and no higher than 80° F if possible. A good mist system is a must, as leaves wilt readily. Keep enough mist on the leaves to see beading of water droplets, not puddles. You can reduce the puddling by adding a small amount of wetting agent to the mist in the first week of sticking. Mist cycles need to be adjusted by weather conditions. Too much mist will cause Botrytis and other diseases; too little mist will cause leaf wilting and delay rooting. Some air movement above the cuttings will help, provided the misting is not adversely affected. Avoid saturating pots for direct-stick, and let the mist gradually add more moisture. Light levels should be around 1,200-1,500 foot-candles and can be increased to 2,500 foot-candles before potting. Too much light will promote wilting, cause bleaching of leaves and require more misting, which may leach out nutrients from the leaves. Too little light will slow rooting and cause the cuttings to stretch. Diseases may also increase under low light levels, as the mist may be too much. Make sure to measure light levels in your propagation area, whether direct-sticking or using rooting media. Add more shade to help your temperature and misting.

Sanitation plays a very important role in the propagation area. Clean up the benches thoroughly with Greenshield or a similar disinfectant before sticking. Get rid of weeds in and around the propagation area. Knock down fungus gnats by treating under benches with lime, rock salt or labeled chemicals such as Adept, Duraguard or Knox-Out and by fogging the area with labeled chemicals such as Duraplex, Orthene + Talstar or Decathlon. Oasis or similar rooting media should be set out and watered properly no earlier than 24 hours before sticking, as this helps reduce erwinia during propagation. Clean up dead and dying leaves at least weekly to reduce botrytis after sticking. You can use Phyton 27 at the low rate (or lower if using low-alkalinity water) after sticking to help control erwinia and botrytis during the heaviest mist cycles. Erwinia is a bacterial rot that shows up on poinsettia cuttings during shipping and within the first five days after sticking. Zero Tol or hydrogen peroxide, at properly diluted rates, are also effective. If cuttings arrive warm and smell of rot or look like they are melting, do not plant them!

Stick cuttings to the proper depth for the rooting media you are using. Some growers take off the lower leaves, whereas others do not. This depends on the quality of cuttings (length) and how deep you like to stick them. Rooting hormone can be beneficial, especially for slower-to-root varieties. Just be careful not to spread erwinia during application of rooting hormone.

REDUCING ENVIRONMENTAL STRESS

I covered the environmental conditions needed for sticking cuttings, but growers also need to pay attention to the environment after potting and during pinching. Plant only rooted cuttings that have enough roots showing on the outside of the rooting media. Oasis wedges should be thoroughly moist when potting, and the top of the wedge should be just below the soil surface to prevent wicking of moisture. Water through the pots after potting the cuttings, but try to keep pots from staying saturated.

Keep light levels less than 3,000 foot-candles after potting, and again during pinching. High light will force more misting or syringing, which causes problems with diseases, fungus gnats and stress on the cuttings and results in delayed rooting. Pinching puts the plants under stress, especially the root systems. Keeping light levels under control during this stage helps the plant recover faster, which shows with better branching after pinching. Temperatures can range from 72-90° F. Keep temperature under control with shading and air movement.

Manage soluble salt levels in the media with proper watering through the containers and checking fertilizer levels. Poinsettias can use 200-300 ppm nitrogen from 20-10-20, 17-5-17 or 15-5-15 during this stage, with a shot of 13-2-13, 14-0-14 or 15-0-15 every third feeding. Going higher than 300 ppm nitrogen during the rooting and pinching stages is a waste and can cause slower growth with the dark-leaf varieties.



Left: Botrytis on poinsettia cuttings during propagation. Right: Sufficiently rooted poinsettia cutting ready to pot. (Above photos courtesy of Roger Styer.)

INSECTS AND DISEASES

There are two major insects to worry about during propagation and potting. First, fungus gnat larvae love to feed on poinsettia cuttings, damaging roots and opening them up to root rot diseases. As mentioned previously, control leftover larvae under benches and knock down adults with a fog or aerosol before sticking. Follow up with drenches during propagation or after potting as needed, using labeled chemicals such as Distance, Citation, Marathon, Knox-out, Duraguard or Azatin. Knox-out and Duraguard will be more effective when there is a drying cycle in the media, which helps release the chemicals. For biological control, drench weekly with Gnatrol or apply Nemasys or other parasitic nematodes to the pots after sticking. The nematodes will not do well in Oasis and need moisture in the pots to move around. Hypoaspis mites can also be used on the pots and under the benches, but they do not like to swim.

Second, make sure the cuttings do not have whiteflies before sticking. If doing your own stock, you should treat the mother plants with Marathon at the appropriate times or use a rotation of chemicals to keep whiteflies off the cuttings. If buying cuttings, inspect them closely and report any

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whitefly problems to your supplier immediately. For controlling whiteflies on stock, you can use labeled chemicals such as Distance, Orthene + Talstar, Avid + Talstar or Botaniguard (if there is enough humidity in the greenhouse). If you want to control whiteflies on cuttings just stuck, use Distance, as this chemical will translocate from top to bottom of the leaf. Getting underleaf coverage of cuttings during propagation or right after potting is very difficult. Once roots are to the outside of the pot, you can treat with Marathon. Be aware that there are reported cases of whitefly resistance to Marathon popping up in the United States.

Thrips can cause problems on poinsettias after potting. Since the weather is warm and poinsettias (possibly along with mums) are the main crop in the greenhouse, thrips will show damage on developing leaves and can cause stunting or malformed leaves. Control thrips in the greenhouse with a rotation of labeled chemicals such as Conserve, Avid + Talstar, Mesurol, Botaniguard and Thiodan. Once the weather gets cooler, thrips should not be a problem.

Several diseases, including Erwinia, can show up during propagation and cause major losses.

Practice good sanitation, cool cuttings before sticking, stick in the morning, and use Phyton 27, Zero Tol or dilute hydrogen peroxide during propagation. Clean diseased

disease problem during propagation, due to the damaged leaves and lots of mist on the leaves. Check cuttings shipped in for Botrytis or leaf damage. Apply



Top: Fungus gnat injury to poinsettia roots. The plant on the left has no fungus gnats; the one on the right has fungus gnats. Bottom: Sufficient rooting before pinching poinsettia. (Above photos courtesy of Roger Styer.)

areas to prevent spreading. Erwinia is less of a problem after the first week of sticking.

Botrytis is probably the biggest

labeled chemicals such as Daconil, Chipco 26019, Phyton 27, Decree or Medallion in the first week of sticking, applying the chemical at the

end of the day when the mist will be off for a few hours. Repeat weekly as needed and rotate chemicals to prevent resistance. Clean up old and infected leaves weekly. Manage the mist schedule properly to avoid puddling water on the leaves.

If cuttings are kept too wet, Rhizoctonia will show up quickly. Adjust your mist cycles and light levels. Drench with labeled chemicals such as Medallion, Cleary's 3336, Chipco 26019 or Domain (Fungo) every four weeks. On direct-stick pots, keep from saturating pots after sticking to help control this disease. The misting will wet the pots sufficiently if half of the pot was watered in before sticking.

Pythium can be a problem if Oasis wedges are dried out before potting and roots are damaged. You can use Subdue to control this problem, but keep wedges moist enough. After potting, drench with labeled chemicals such as Banrot or Subdue + Cleary's 3336 or Subdue + Medallion once roots start coming out, and repeat monthly. Many growers are having success with biocontrols such as Rootshield or Actino-Iron being added around potting.

Finally, poinsettia scab can pop up during propagation and rooting after potting. This disease was a major problem last year. Due to



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warm temperatures and frequent overhead misting, poinsettia scab is easily spread during propagation and early growth after potting. Examine cuttings carefully for symptoms. Spray every two to three weeks if needed with labeled chemicals such as Terraguard, Compass, Heritage, Systhane or Protect. Once off of overhead misting or watering, this disease is no longer a problem. Rogue out any cuttings or plants showing symptoms.

CROP SCHEDULE

The final area that affects poinsettia quality is the crop schedule. Growing poinsettias has become more difficult lately due to the large number of new varieties with different growing schedules. Varying pot sizes and shipping schedules make it important for every poinsettia grower to have defined schedules by variety and pot size. This schedule should include sticking, potting, pinching, start of short days and shipping. Consult with your cutting supplier about schedules by variety and pot sizes.

The problems I see growers having with scheduling are not enough time between potting and pinching, or between pinching and initiation, as well as pinching when plants are not rooted properly. The bigger the pot size, the more time needed between potting and pinching. Many of the newer varieties are slower-growing than even 'Freedom' and should have more time between potting and pinching, and between pinching and initiation, to get enough vegetative growth to meet the desired finished specs. Some growers forget that Freedom and a few other varieties initiate earlier than most varieties — as much as 10 days earlier. So they forget to have a different schedule for Freedom compared to the later varieties, a situation that results in not enough time

between pinching and initiation for Freedom. This leads to small plants with fewer leaves on the laterals.

When pinching, the plants should be properly rooted to handle the stress of pinching and growing out. If there are not enough roots, laterals will be very slow and erratic in growing out, and the number of breaks will be reduced. Make sure roots are to the side of the pot before pinching, and do the pinching properly. This is another area where it pays to review procedures with workers to get the consistency you want.

Those are my key points to getting your finished poinsettias off to a good start. Focus on quality cuttings, proper environmental conditions, getting the rooting desired, controlling insects and diseases, and keeping things on schedule. Get through the end of September, and 80 percent of the work is done. After that, control the height with graphical tracking, growth regulators and temperature, keep the roots healthy, get the bracts developed and protected, and ship them out on time. If you would like further information, order the Poinsettia Production video series from Ball Publishing OFA at (614) 487-1117.



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